CLAIMS

Having thus described the aforementioned invention, I claim:

1. A non-linear magnetic harmonic motion converter apparatus comprising:

a ring magnet disposed to rotate about a longitudinal axis, said ring magnet having respective north and south poles distributed along an outer perimeter and an inner perimeter, said ring magnet having a gimbal ring connector disposed within said inner perimeter to provide gimbaled movement between said inner perimeter of said ring magnet and said longitudinal axis;

an axial shaft having an axis of rotation disposed parallel with said longitudinal axis of said ring magnet, said axial shaft extended through said gimbal ring connector, said axial shaft rotatable in relation to said ring magnet; and

at least one rotor magnet disposed on said axial shaft, said at least one rotor magnet rotates in unison with said axial shaft, said at least one rotor magnet having a rotor magnetic field defined by respective north and south poles of said at least one rotor magnet, said rotor magnetic field is oriented in a circumferential path of rotation about said axial shaft, said rotor magnetic field is directed substantially perpendicular to a radius from said axis of rotation of said axial shaft, said rotor magnetic field is alternately attracted to and repelled by the north and south poles of said ring magnet to induce rotation of said axial shaft when said ring magnet is reciprocated in relation to said axial shaft.

2. The apparatus of Claim 1 wherein said axial shaft including a plurality of rotor magnets disposed in spaced apart orientation along said axial shaft, each rotor magnet having respective rotor magnetic fields oriented in a circumferential path of rotation about said axial shaft, each respective rotor magnetic field is alternately attracted to and repelled by said first magnetic field of said ring magnet to induce rotation of said axial shaft when said first ring magnet is reciprocated in relation to said axial shaft.

3. The apparatus of Claim 2 wherein said plurality of rotor magnets including a plurality of pairs of rotor magnets positioned in spaced apart configuration along said axial shaft, each pair of said plurality of pairs of rotor magnets are separated by an angle of separation in a range between about 90 degrees of separation to about 180 degrees of separation.

4. The apparatus of Claim 2 wherein said ring magnet including a plurality of ring magnets disposed in spaced apart and concentric orientation along said axial shaft, each ring magnet having respective gimbal ring connectors disposed within each inner perimeter to provide gimbaled movement between each respective ring magnet and said longitudinal axis.

5. The apparatus of Claim 4 wherein said plurality of ring magnets are interconnected by a plurality of side members disposed in substantially parallel orientation on respective portions of said outer perimeter of each respective ring magnet, said side members further includes a plurality of pivot connectors to pivotably connect each side member to said outer perimeter of each respective ring magnet, each of said side members are substantially parallel to said axial shaft and are reciprocatingly moved substantially parallel to said axial shaft;

whereby said plurality of side members are reciprocatingly moved by an externally provided reciprocating force with resulting movement of each respective ring magnet and resulting re-orientation of respective ring magnetic fields alternately attracting and repelling said rotor magnets to induce rotation of said axial shaft with each reciprocation of said plurality of side members.

6. The apparatus of Claim 1 wherein said ring magnet is enclosed by a housing having a spherical shape, said ring magnet and said gimbal ring connector move upon reciprocating movement of said housing, whereby with each movement of said ring magnet in response to movement of said housing, said at least one rotor magnet is alternately attracted to and repelled by the movement of the respective north and south poles of said ring magnet to induce rotation of said axial shaft.

7. The apparatus of Claim 5 wherein said plurality of side members further including at least one perimeter magnet disposed at about a midpoint of each side member, each perimeter magnet includes respective north and south poles having a perimeter magnetic field of sufficient strength to extend proximal to said axial shaft for interaction with said rotor magnetic fields of said plurality of rotor magnets along said axial shaft.

8. The apparatus of Claim 1 wherein said ring magnet is connected to a platform disposed in spaced apart and concentric orientation from said ring magnet, said platform having an outer perimeter to which a plurality of side members are connectable in substantially parallel orientation between respective portions of said outer perimeter of said

ring magnet and said outer perimeter of said platform, said side members including a plurality of pivot connectors to pivotably connect each side member to said outer perimeter of said ring magnet, each of said side members are substantially parallel to said axial shaft and are reciprocatingly moved substantially parallel to said axial shaft, said platform and said plurality of side members are reciprocatingly moved by an externally provided reciprocating force with resulting movement of said ring magnet and resulting re-orientation of respective magnetic fields alternately attracting and repelling said at least one rotor magnet to induce rotation of said axial shaft with each reciprocation of said platform and said plurality of side members.

9. A non-linear magnetic harmonic motion converter apparatus comprising:

a plurality of ring magnets aligned in spaced apart orientation to reciprocate in relation to a longitudinal axis, each of said plurality of ring magnets including respective north and south poles distributed along an outer perimeter and an inner perimeter of each one of said plurality of ring magnets, each ring magnet having a gimbal ring connector disposed within said inner perimeter to provide gimbaled movement between said inner perimeter of each ring magnet and said longitudinal axis;

an axial shaft having an axis of rotation disposed parallel with said longitudinal axis of said ring magnet, said axial shaft extended through said gimbal ring connector of each ring magnet, said axial shaft is rotatable in relation to said plurality of ring magnets;

a plurality of side members disposed in substantially parallel orientation, said plurality of side members interconnected between said plurality of ring magnets on

respective portions of said outer perimeter of each respective ring magnet, said side members including a plurality of pivot connectors to pivotably connect each side member to said outer perimeter of each respective ring magnet, each of said side members are substantially parallel to said axial shaft and are reciprocatingly moved substantially parallel to said axial shaft; and

at least one rotor magnet disposed on said axial shaft, said at least one rotor magnet rotates in unison with said axial shaft, said at least one rotor magnet having a rotor magnetic field defined by respective north and south poles oriented in a circumferential path of rotation about said axial shaft with the net flux field of said rotor magnetic field is directed substantially perpendicular to the axis of rotation of said axial shaft, said rotor magnetic field is extended from said axial shaft, said rotor magnetic field is alternately attracted to and repelled from respective north and south poles of each one of said plurality of ring magnets to induce rotation of said axial shaft when said plurality of ring magnets and said plurality of side members are reciprocatingly moved in relation to said axial shaft.

10. The apparatus of Claim 9 wherein said at least one rotor magnet includes a plurality of pairs of rotor magnets positioned in spaced apart configuration along said axial shaft, each pair of said plurality of pairs are separated by an angle of separation of a range between about 90 degrees of separation to about 180 degrees of separation.

11. The apparatus of Claim 9 wherein said plurality of ring magnets are positioned within a housing having buoyancy for movement with wave motions of a body of water, said housing including a plurality of connector members extended internally to attach to at least one outer perimeter of said plurality of ring magnets, said plurality of connector members

suspend said plurality of ring magnets within said housing to allow gimbaled movement of each ring magnet in response to said housing movement with wave motions, whereby said rotor magnetic field of said at least one rotor magnet is alternately attracted to and repelled from respective north and south poles of each one of said plurality of ring magnets to induce rotation of said axial shaft in relation to said ring magnets, upon the gimbaled movement of respective ring magnets in response to movement of said housing having buoyancy due to wave motions of the body of water.

12. The apparatus of Claim 9 wherein said plurality of side members including at least one perimeter magnet disposed proximal a midpoint of each side member, each perimeter magnet having respective north and south poles having a perimeter magnetic field of sufficient strength to extend to said axial shaft, wherein said rotor magnetic field is alternately attracted to and repelled from said perimeter magnetic field of each perimeter magnet to induce rotation of said axial shaft when said plurality of ring magnets and said plurality of side members are reciprocatingly moved in relation to said axial shaft.

13. A non-linear magnetic harmonic motion converter apparatus comprising:

an upper and a lower platform disposed in spaced apart orientation, said upper and lower platforms having inwardly faced surfaces interconnected by an axial shaft, said axial shaft having opposed first and second ends connected by respective first and second gimbal connectors to said upper and lower platforms at opposed ends of said axial shaft, each of said

upper and lower platforms having north and south magnet fields disposed respectively on a perimeter of each platform and on said inwardly faced surface of each platform;

a sleeve bearing positioned to rotate around said axial shaft , said sleeve bearing is disposed to reciprocatingly rotate between said first and second gimbal connectors; and

at least one rotor magnet disposed to extend from said sleeve bearing, said at least one rotor magnet having a rotor magnetic field defined by respective north and south poles oriented in a circumferential path of rotation about said axial shaft with the net flux fields of the north and south poles directed substantially perpendicular to the axis of rotation around said axial shaft, said at least one rotor magnet is rotatable upon gimbaled movement of said upper or lower platform;

whereby said north and south magnet fields of said upper and lower platforms are re-positioned upon movement of either upper and lower platform, with alternately attracting and repelling of said rotor magnetic field to induce rotation of said axial shaft with movement of either upper and lower platform.

14. A non-linear magnetic harmonic motion converter apparatus comprising:

an upper and a lower platform disposed in spaced apart orientation, said upper and lower platforms having inwardly faced surfaces interconnected by an axial shaft, said axial shaft having opposed first and second ends connected between said upper and lower

platforms, said upper platform supported to reciprocate above said lower platform, said axial shaft extended through said lower platform to allow for rotation of said axial shaft relative to said upper and lower platforms;

a ring magnet disposed to rotate about said axial shaft extended through said ring magnet, said ring magnet having a ring magnetic field defined by respective north and south poles disposed along an outer perimeter and an inner perimeter of said ring magnet, said ring magnet having a gimbal ring connector disposed within said inner perimeter, said axial shaft extends through said gimbal ring connector to provide gimbaled movement of said ring magnet relative to said axial shaft, said ring magnet having an outer perimeter from which two pivot arms are extended on opposed sides of said outer perimeter;

at least two pair of support members disposed in substantially parallel orientation from opposed sides of said lower platform, each pair of support members are in spaced apart configuration for sliding insertion therebetween of respective pivot arms of said rotor magnet, said at least two pair of support members do not obstruct the reciprocation of said upper platform above said lower platform;

a plurality of side members disposed in substantially parallel orientation between respective portions of said outer perimeter of said ring magnet and said upper platform, said plurality of side members further includes a plurality of pivot connectors to pivotably connect each side member between said outer perimeter of said ring magnet and said outer perimeter of said upper platform, each of said side members is substantially parallel to said axial shaft and is reciprocatingly moved substantially parallel to said axial shaft, whereby

said plurality of side members are reciprocatingly moved by an externally provided reciprocating force applied to said upper platform with resulting movement of said ring magnet and resulting repositioning of the north and south poles of said ring magnet in relation to said axial shaft; and

at least one rotor magnet disposed to extend from said axial shaft, said at least one rotor magnet rotates in unison with said axial shaft, said at least one rotor magnet having a rotor magnetic field defined by respective north and south poles oriented in a circumferential path of rotation about said axial shaft with the net flux field of said rotor magnetic field is directed substantially perpendicular to the axis of rotation of said axial shaft, said rotor magnetic field is alternately attracted to and repelled from respective north and south poles of said ring magnet to induce rotation of said axial shaft when said ring magnets and said plurality of side members are reciprocatingly moved in relation to said axial shaft;

whereby said ring magnet and said upper platform are moved relative to said lower platform with said ring magnetic field repositioned with each movement of said ring magnet in response to external force on said upper platform, said rotor magnetic field is alternately attracted and repelled by repositioning of said ring magnetic field to induce rotation of said axial shaft with each movement of said at least one ring magnet and said upper platform.

15. A non-linear magnetic harmonic motion converter apparatus comprising:

a plurality of gimbal supported ring magnets disposed in spaced apart concentric orientation within a frame member, each gimbal supported ring magnet are disposed within

said frame member to reciprocate about an axial shaft disposed through a central portion of said frame member, each gimbal supported ring magnet having a gimbal magnet field of sufficient strength to extend to said axial shaft,

a plurality of electromagnets disposed in spaced apart orientation on an inner perimeter of said frame member, each of said plurality of electromagnets having an electrical circuit means powered by an electric power source connected thereto, said electrical circuit means provides electric power from the electric power source in a timed sequence to alternate the magnetic poles of each of said plurality of electromagnets resulting in reciprocation of each gimbal supported ring magnet and repositioning of each gimbal magnet field in relation to said axial shaft; and

at least one pair of rotor magnets disposed on said axial shaft, said at least one pair of rotor magnets disposed in opposed orientation on said axial shaft, said at least one pair of rotor magnets rotates in unison with said axial shaft, each rotor magnet having a rotor magnet field defined by respective north and south poles oriented in a circumferential path of rotation about said axial shaft with said rotor magnet field directed substantially perpendicular to the axis of rotation of said axial shaft, said rotor magnet field is alternately attracted to and repelled from each gimbal magnet field upon repositioning of each gimbal supported ring magnet by the alternation of the magnetic poles of each of said plurality of electromagnets.

16. The apparatus of Claim 15 wherein said at least one rotor magnet includes a plurality of pairs of rotor magnets positioned in spaced apart configuration along said axial shaft, each

pair of said plurality of pairs of rotor magnets are separated by an angle of separation in a range between about 90 degrees of separation to about 180 degrees of separation.

17. A non-linear magnetic harmonic pump including a housing having a plurality of fluid channels therein, the plurality of fluid channels including at least one inlet fluid channel and at least one output fluid channel, comprising:

a plurality of rotor magnet units disposed within the housing, each rotor magnet unit including an axial shaft disposed within each one of a plurality of radially oriented fluid channels connected between the plurality of fluid channels, each radially oriented fluid channel is in fluid communication with the at least one inlet fluid channel and with the at lest one output fluid channel within the housing, each rotor magnet unit further including:

a plurality of impeller fins interconnected at a base end of each impeller fin to rotate around said axial shaft, each impeller fin having distal ends rotating around said axial shaft for transfer of fluid through each respective radially oriented fluid channel; and

at least one rotor magnet extended in a radial configuration interdisposed between said plurality of impeller fins, said at least one rotor magnet rotatable around said axial shaft in unison with said plurality of impeller fins, said at least one rotor magnet including respective north and south poles oriented in a circumferential path of rotation about said axial shaft with the net flux fields of the north and south poles directed substantially perpendicular to the axis of rotation of said axial shaft; and

a plurality of gimbal lever magnets disposed to extend in a radial configuration from a central gimbal supported pivot axis, each gimbal lever magnet disposed in spaced-apart orientation between respective pairs of said plurality of rotor magnet units, said plurality of gimbal lever magnets are each reciprocatingly moved in a non-linear path relative to the central gimbal supported pivot axis, each gimbal lever magnet having a gimbal magnet field disposed between a north and a south magnet pole of each gimbal lever magnet;

whereby each rotor magnet unit rotates about each respective axial shaft upon the influence on the net flux fields of the north and south poles of each respective rotor magnet by the movement of the gimbal magnet field of each gimbal lever magnet disposed between respective pairs of rotor magnet units, with pumping of fluids through each respective fluid channel from the at least one inlet fluid channel and toward the at least one output fluid channel of the pump.

18. A non-linear magnetic harmonic pump including a housing having a plurality of fluid channels therein, the plurality of fluid channels including at least one inlet fluid channel and at least one output fluid channel, comprising:

a plurality of stator magnets disposed in spaced-apart orientation along a perimeter of a housing, each stator magnet having a north and a south magnet pole having respective north and south magnetic fields;

a plurality of rotor magnet units disposed within the housing, each rotor magnet unit including an axial shaft disposed within each one of a plurality of radially oriented fluid channels connected between the plurality of fluid channels, each radially oriented fluid

channel is in fluid communication with the at least one inlet fluid channel and with the at least one output fluid channel within the housing, each rotor magnet unit further including:

a plurality of impeller fins interconnected at a base end of each impeller fin to rotate around said axial shaft, each impeller fin having distal ends rotating around said axial shaft for transfer of fluid through each respective radially oriented fluid channel;

at least one rotor magnet extended in a radial configuration interdisposed between said plurality of impeller fins, said at least one rotor magnet rotatable around said axial shaft in unison with said plurality of impeller fins, said at least one rotor magnet including a rotor magnet field defined by respective north and south poles oriented in a circumferential path of rotation about said axial shaft with the net flux fields of the north and south poles directed substantially perpendicular to the axis of rotation of said axial shaft;

a plurality of gimbal lever magnets disposed to extend in a radial configuration from a central gimbal supported pivot axis, each gimbal lever magnet disposed in spaced-apart orientation between respective pairs of said plurality of rotor magnet units, said plurality of gimbal lever magnets are each reciprocatingly moved in a non-linear path relative to the central gimbal supported pivot axis, each gimbal lever magnet having a gimbal magnet field disposed between a north and a south magnet pole of each gimbal lever magnet; and

a plurality of electromagnets disposed in spaced apart orientation within said housing, each electromagnet is interdisposed between each rotor magnet unit, each electromagnet connected to an electric power source and a control means providing electric power in a timed sequence to each electromagnet to alternate the magnetic poles of each electromagnet;

whereby each rotor magnet unit rotates about each respective axial shaft upon the influence on the rotor magnet field of each respective rotor magnet by the attracting and repelling of the magnet fields of each stator magnet disposed along the perimeter of the housing, by the alternating of the magnetic poles of each electromagnet, and by the movement of the gimbal magnet field of each gimbal lever magnet with resulting pumping of fluids through each respective fluid channel from the at least one inlet fluid channel and toward the at least one output fluid channel of the pump.

19. A non-linear magnetic harmonic electric generator including a housing having a plurality of channels therein, said electric generator including electromagnetic induction elements interdisposed between the plurality of channels and circuitry interconnected with the electromagnetic induction elements, said electric generator comprising:

a central magnet supported in a gimbal configuration, said central magnet is reciprocatingly moved in a non-linear path relative to the housing, said central magnet having a central magnetic field defined by the north and south magnet poles oriented on respective inner and outer perimeters of said central magnet to form a central magnetic field; and

a plurality of rotor magnet units disposed within the housing, each rotor magnet unit including an axial shaft disposed within each one of a plurality of radially oriented channels of the plurality of channels, each radially oriented channel is adjacent at least one of the electromagnetic induction elements, each rotor magnet unit further including:

at least one rotor magnet rotatable around said axial shaft, each rotor magnet including a rotor magnet field defined by respective north and south poles oriented in

a circumferential path of rotation about said axial shaft with the net flux fields of the north and south poles directed substantially perpendicular to the axis of rotation of said axial shaft;

whereby rotation occurs for each rotor magnet unit about each respective axial shaft upon the influence on the rotor magnet field of each respective rotor magnet by the movement of the central magnetic field of the central magnet along with the alternation of the magnetic poles of each electromagnet, the rotation of each rotor magnet unit induces rotation of each respective axial shaft for activation of circuitry for the production of electricity.

20. A non-linear magnetic harmonic electric generator including a housing having a plurality of channels therein, said electric generator including magnetic induction elements interdisposed between the plurality of channels and circuitry interconnected with the magnetic induction elements, said electric generator comprising:

a central magnet supported in a gimbal configuration, said central magnet is reciprocatingly moved in a non-linear path relative to the housing, said central magnet having a central magnetic field defined by the north and south magnet poles oriented on respective inner and outer perimeters of said central magnet to form a central magnetic field;

a plurality of stator magnets disposed in spaced-apart orientation along a perimeter of a housing, each stator magnet having a north and a south magnet pole having respective north and south magnetic fields; and

a plurality of rotor magnet units disposed within the housing, each rotor magnet unit including an axial shaft disposed within each one of a plurality of radially oriented channels of the plurality of channels, each radially oriented channel is adjacent at least one of the magnetic induction elements, each rotor magnet unit further including:

at least one rotor magnet rotatable around said axial shaft, each rotor magnet including a rotor magnet field defined by respective north and south poles oriented in a circumferential path of rotation about said axial shaft with the net flux fields of the north and south poles directed substantially perpendicular to the axis of rotation of said axial shaft;

whereby rotation occurs for each rotor magnet unit about each respective axial shaft upon the influence on the rotor magnet field of each respective rotor magnet by the attracting and repelling of the magnet fields of each stator magnet and by the movement of the central magnetic field, the rotation of each rotor magnet unit produces rotation of each respective axial shaft for activation of circuitry attached to each respective axial shaft for the production of electricity.